

### **REMARKS**

In view of the Examiner's Answer dated April 28, 2004 (Paper No. 04212004), and in accordance with MPEP §706.07(h), Applicant hereby withdraws the pending Appeal concurrent with the filing of a Request for Continued Examination (RCE). Applicant further requests an Interview with the examiner prior to the examiner issuing another Office Action. An Applicant originated Interview Request form is enclosed with this Amendment.

This Amendment is responsive to the Office Action which was the subject of the appeal dated August 25, 2003 (Paper No. 8), as effected by the Examiner's Answer dated April 28, 2004.

By this Amendment, claim 27 is added, having a more limited scope. Support for new claim 27 can be found variously throughout the specification, for example, claim 13. No new matter was added. Accordingly, claims 13-27 are pending in this application for the examiner's consideration.

### **Rejections under 35 U.S.C. §102**

The Examiner rejected claims claim 13 under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 4,355,076 to Gash in view of Applicants alleged admitted prior art. Applicant respectfully traverses this rejection.

Claim 13 recites a method for manufacture of a polyolefin article, including the steps of covering an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) for average coefficient of linear expansion in the 20 – 80  $^{\circ}\text{C}$  range with a layer of polyolefin having a melting point lower than that of said oriented polyolefin material; and subsequent to the covering with the polyolefin layer, effecting joining of the oriented polyolefin material by the application of pressure and heat at a temperature below the melting point of the oriented polyolefin material but sufficient to soften or melt said covering polyolefin.

The specification discloses on page 7, line 13 to 15 that the unoriented polyolefins generally have an average LEC of greater than  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ). Particularly, the applicant admitted only the same as the prior art.

The language on page 7, line 15 to 23, "Due to the inclusion of the oriented polyolefin material, the polyolefin article of the present invention exhibits a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) for average coefficient of linear expansion in the 20 - 80  $^{\circ}\text{C}$  range, as specified

above. In other words, the oriented polyolefin material is included in the polyolefin article so that its average coefficient of linear expansion in the 20 - 80 °C range is maintained at a value of not exceeding  $5 \times 10^{-5}$  (/°C).” is the description of the present invention, and the applicant never describes that the oriented polyolefins have an LEC of not greater than  $5 \times 10^{-5}$  (/°C). Further, the applicant does not admit the same as the prior art.

Even if unoriented polyolefins have an LEC of greater than  $5 \times 10^{-5}$  (/°C), this does not always mean that oriented polyolefins have an LEC of not greater than  $5 \times 10^{-5}$  (/°C). The applicant firstly found that the combination of unoriented polyolefin and oriented polyolefin allows to make an LEC not greater than  $5 \times 10^{-5}$  (/°C). The language of page 7, line 15 to 24 describes this and thus the same does not relate to the prior art nor known facts.

Gash discloses a two-step dry laminating method wherein at least two plastic films of the same or different nature are brought into intimate contact with one another and heated to a temperature up to the melting point of the film having the lowest melting point in order to form a low peel strength composite. These films may comprise polyolefin material, including oriented polyolefin, which may be joined through the use of heat and pressure rolls.

As acknowledged in the action, Gash fails to disclose, teach or suggest the oriented polyolefin film as having an average coefficient of linear expansion lower than  $5 \times 10^{-5}$  (/°C) in the 20 - 80 °C range, as is disclosed in claim 13 of the present application. The action seeks to remedy Gash’s deficiency by alleging that one of ordinary skill in the art would readily expect the oriented polyolefin films in Gash to have an average coefficient of linear expansion of less than or equal to  $5 \times 10^{-5}$  (/°C) in the 20 - 80 °C range in view of the Specification’s disclosure that “an average linear expansion coefficient of polyolefin in an unoriented state is generally greater than  $5 \times 10^{-5}$  (/°C) in the 20 - 80 °C range.” (*page 7, lines 13-15*).

While the present application does state that the average coefficient of linear expansion of polyolefin in an unoriented state is generally greater than  $5 \times 10^{-5}$  (/°C) in the 20-80 °C range, it does not necessarily follow that all oriented polyolefin materials have a value lower than  $5 \times 10^{-5}$  (/°C) in the 20 - 80 °C range. This can be seen, for example, in comparative examples 4-12 of U.S. Patent No. 4,717,624 (“Ikenaga et al.”), wherein each of the oriented layers possess average coefficients of linear expansion exceeding  $5 \times 10^{-5}$  (/°C). (*See col. 17-18*). As taught in the present application, it is only when the correct orientation ratio is chosen (preferably within 20 - 40) and a temperature within the correct range used (preferably within 85 °C - 120 °C) that

oriented polyolefin materials having an average coefficient of linear expansion of less than  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) in the 20 – 80  $^{\circ}\text{C}$  range are obtained. (See page 13, lines 2-20). The use of temperatures and orientation ratios outside of these preferred ranges makes orientation at high ratios difficult, which in turn decreases the mechanical properties of the material and leads to increased average coefficients of linear expansion. (See page 13, lines 17-20).

Gash fails to disclose, teach or suggest the preferred orientation ratios or average coefficient of linear expansion values necessary to ensure that oriented polyolefin materials having an average coefficient of linear expansion of less than  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) in the 20 – 80  $^{\circ}\text{C}$  range are obtained. In fact, because the preferred temperature range disclosed in Gash is between 60 – 180  $^{\circ}\text{C}$ , Gash does not employ the high orientation ratios required to achieve oriented materials having average coefficients of linear expansion of less than  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) in the 20 – 80  $^{\circ}\text{C}$  range because temperatures above that of 120  $^{\circ}\text{C}$  are employed. As recited in the present invention, “the use of orientation temperature of exceeding 120  $^{\circ}\text{C}$  may result not only in the occurrence of sheet breakage, but also in the difficulty to effect orientation at high ratios.” (page 13). Gash’s use of temperatures exceeding 120  $^{\circ}\text{C}$ , therefore, requires that high orientation ratios are not used, and oriented materials having average coefficients of linear expansion of less than  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) in the 20 – 80  $^{\circ}\text{C}$  range are therefore not attained. Claim 25 has been added to further clarify this point, requiring the orientation temperature be maintained within a range of 85 – 120  $^{\circ}\text{C}$ .

Accordingly, certain conditions must be met to ensure that an oriented polyolefin material has a value lower than  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) in the 20 - 80  $^{\circ}\text{C}$  range. Since, as discussed above, Gash fails to disclose, teach or suggest the conditions necessary to obtain an oriented material having an average coefficient of linear expansion of less than  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) in the 20 – 80  $^{\circ}\text{C}$  range, a prima facie rejection of claim 13 has not been established, and withdrawal of this rejection is respectfully requested.

A document can only anticipate a claim if the document discloses, explicitly or implicitly, each and every feature recited in the claim. Verdegall Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Since Gash ‘076 fails to disclose, either explicitly or implicitly, teach or suggest at least the above-noted features recited in independent claim 13, Gash ‘076 cannot anticipate the claim. At least in view of the foregoing, claim 13 is allowable, and the rejection should be withdrawn.

### **Rejections under 35 U.S.C. §103**

The Examiner rejected claims claim 13 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,355,076 to Gash in view of Applicants alleged admitted prior art. Applicant respectfully traverses this rejection.

As acknowledged in the Examiner's Answer dated April 28, 2004 (Paper No. 04212004), this rejection has been withdrawn.

The Examiner rejected claim 14 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 4,355,076 to Gash in view of Applicants alleged admitted prior art and further in view of U.S. Patent 4,717,624 to Ikenaga et al. Applicant respectfully traverses this rejection.

Claim 14, depending from claim 13, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection should be withdrawn.

The Examiner rejected claims 15, 16, 19, 21, 22 and 26 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 4,355,076 to Gash in view of Applicants alleged admitted prior art and further in view of U.S. Patent 4,311,660 to Barham et al. Applicant respectfully traverses this rejection.

Claims 15, 16, 19, 21 and 22 depending from claim 13, are also allowable for the reasons above. Moreover, these claims are further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection should be withdrawn.

Claim 26 recites a method for manufacture of a polyolefin article characterized as including the steps of: covering an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) for average coefficient of linear expansion in the 20 – 80  $^{\circ}\text{C}$  range with a layer of polyolefin having a melting point lower than that of said oriented polyolefin material; said oriented polyolefin material being prepared by subjecting an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) for average coefficient of linear expansion in the 20 – 80  $^{\circ}\text{C}$  range to a heat treatment so that only its surface layer melts while its central portion is left

unmelted, whereby only its molecular orientation at the surface layer is relaxed while its molecules at the central portion is kept oriented, and the surface layer melts at a lower temperature than does the central portion; subsequent to the covering with the polyolefin layer, effecting joining of the oriented polyolefin material by the application of pressure and heat at a temperature below the melting point of the oriented polyolefin material but sufficient to soften or melt said covering polyolefin.

Similar to claim 15, claim 26 includes the step of heat treating the surface of an oriented polyolefin material such that only the molecular orientation of the surface is relaxed, while the molecules at the central portion of the material remain oriented. (*See page 29, lines 15-24*). This heat treatment allows the oriented polyolefin material to be joined with other materials, providing enhanced mechanical properties. (*See page 33*).

In contrast, Gash requires that “the orientation in the films making up the laminate is not affected.” (*col. 2, lines 31-34*). In fact, in each of the illustrative examples described in Gash, the Specification clearly stated that “[n]o pre-treatment whatsoever was given to the surfaces prior to the lamination process.” (*col. 3, lines 24-25; col. 4, lines 10-12; 15-37*). Gash clearly fails to teach, disclose or suggest these limitations.

Barham et al. ‘660 is applied for their heat treating step. However, as discussed above, if there is no pretreatment in Gash, there can be no motivation to add a pretreatment to Gash, let alone a demonstration by the examiner that such a pretreatment could be added to Gash and would succeed, nor is there motivation to add the pretreatment.

Accordingly, a prima facie case of obviousness has not been established, and the rejection should be withdrawn.

The Examiner rejected claims 17, 18, 20, 23 and 24 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 4,355,076 to Gash in view of Applicants alleged admitted prior art and U.S. Patent 4,717,624 to Ikenaga et al. and further in view of U.S. Patent 4,311,660 to Barham et al. Applicant respectfully traverses this rejection.

Claims 17, 18, 20, 23 and 24 depending from claim 13, are also allowable for the reasons above. Moreover, these claims are further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection should be withdrawn.

The Examiner rejected claim 25 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 4,355,076 to Gash in view of Applicant's alleged admitted prior art and further in view of U.S. Patent 3,361,607 to Bruno. Applicant respectfully traverses this rejection.

Claim 25 depending from claim 13, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection should be withdrawn.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. MIY-9007/DIV from which the undersigned is authorized to draw.

Dated: July 13, 2004

Respectfully submitted,

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